

What is claimed is:

1. A method for recovery of processing of a component of a distributed network accounting system, the method comprises:
context check-pointing state of processing in the component to permit automatic recovery of the component to the component's most recent processing context checkpoint;
executing operating system facilities to provide automatic recovery of the system components to the component's most recent processing context.
2. The method of claim 1 wherein check pointing in the component further comprises:
maintaining the component's processing context as in-memory object and as a disk-based file.
3. The method of claim 1 wherein executing operating facility further comprises:
re-starting the component from its last check-pointed processing context during a subsequent recovery of the component in the system.
4. The method of claim 1 wherein components are nodes where changes in the processing context of the component are characterized as generally single/atomic transactions or other transactions that are easily check-pointed.
5. The method of claim 4 further comprising:
executing the component as an "Immortal" process under management of the operating system.
6. The method of claim 4 further comprising:
executing the component as an "Immortal" process causing the operating system to automatically re-start the component from its most recent checkpoint state.
7. The method of claim 1 further comprising:

executing each host in the system under the control of a node manager that persists to disk the current state of the host, where the current state includes the process status of which components are executing and a list of usage data that has been successfully processed.

8. The method of claim 1 wherein in the event of a graceful or non-graceful shutdown of a component or the system, the system state is preserved, and is used to restore the system back to its last known state.

9. The method of claim 8 wherein the component stores copies of records received for backup and restore purposes, enabling the records to be re-processed in the event of a downstream system failure.

10. A computer program product residing on a computer readable medium for recovering a state of processing in a component of a distributed network accounting system, comprises instructions for causing a computer to:

context check-point a state of processing in the component to permit automatic recovery of the component to the component's most recent processing context checkpoint; and
execute an operating system facility to provide automatic recovery of the system component to the component's most recent processing context.

11. The computer program product of claim 10 wherein instructions to check point further comprise instructions to:

maintain the component's processing context as in-memory object and as a disk-based file.

12. The computer program product of claim 10 wherein instructions to check point further comprise instructions to:

re-start the component from its last check-pointed processing context during a subsequent recovery of the component in the system.

13. The computer program product of claim 10 wherein instructions to execute further comprise instructions to:

execute the component as an “Immortal” process under management of the operating system to cause the operating system to automatically re-start the component from its most recent checkpoint state.

14. A distributed network accounting system, comprising:

a plurality of host computers that hosts at least one network accounting process and a computer program product residing on a computer readable medium for providing fault tolerance to a data processing domain for a network accounting process, comprises instructions for causing the host computer to:

context check-point a state of processing in the a data processing domain to permit automatic recovery of the data processing domain to the data processing domain’s most recent processing context checkpoint; and

execute an operating system facility to provide the automatic recovery of the data processing domain to the data processing domain’s most recent processing context.

15. The distributed network accounting system of claim 14 wherein the data processing domain is a run-time node manager, a run-time data manager or an administrative configuration manager.

16. The distributed network accounting system of claim 14 wherein the data processing domain further comprises:

a recovery manager that executes the computer program product to recover a state of the data processing domain.

17. The distributed network accounting system of claim 16 wherein the at least one network accounting process is a data collector process that produces network accounting records, or an aggregation process that aggregates network accounting records, or an enhancement process that enhances attributes of network accounting records, or an output interface process that produces records for use by an application.